

## ACKNOWLEDGEMENTS

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## 12. FURTHER RECORDS OF LOBSTERS FROM BOMBAY

(With a plate)

Three species of spiny lobsters have so far been recorded from Bombay, viz. *Panulirus polyphagus* (Herbst), *Panulirus dasyopus* (H. Milne-Edwards), and *Panulirus versicolor* (Latreille). Subsequent collections made by the authors have revealed the occurrence of one more species of spiny lobster and two of squat lobsters (family Scyllaridae).

The fishing season of 1961-62 was noted for the paucity of mackerel off the Ratnagiri coast. This has variously been attributed to temperature fluctuations and veering of the currents. The almost complete disappearance of mackerel from Ratnagiri was accompanied by the presence of marine forms at Bombay which do not normally occur there. Thus two fishes, the Moorish idol *Zanclus cornutus* (Linnaeus) and squirrel fish *Holocentrum rubrum* (Forsk.) were recorded for the first time from Bombay, and other fishes, such as *Pomacanthus annularis* (Bloch) and *Chaetodon collaris* (Bloch) which are found only occasionally, were collected in large numbers.

\* Not consulted in original.

At the same time, two specimens of the spiny lobster *Panulirus ornatus* (Fabricius) were also obtained from Bombay city, one from Chowpatty on 24-2-1962, and a larger one from Colaba on 21-5-1962. These were the only occasions during the last ten years when we have collected this species from Bombay. Enquiries made from fishermen along the coast of Maharashtra State have also indicated that it has never so far been collected by them.

## PALINURIDAE

***Panulirus ornatus* (Fabricius)**

*Panulirus ornatus* Fabricius, Suppl. Ent. Syst.: 400 (1798); De Haan, Fauna Japonica, Crust. : 157 (1841).

*Panulirus (Panulirus) ornatus* Miers, Ann. Mag. nat. Hist., ser. 5, 5 : 378 (1880).

*Panulirus homarus* Pfeffer, Mitt. naturh. Mus. Hamburg 14 : 263 (1897).

*Panulirus polyphagus* Borradaile, Fauna Geogr. Maldive Laccad. Archipel. 2 (3) : 754 (1904).

*Panulirus ornatus* Henderson, Trans. Linn. Soc. London, Zool., ser. 2, 5 : 433 (1893); de Man, Siboga Exped. Rep. 39a2 : 51 (1916); Holthuis, Temminckia 7 : 138 (1947); Barnard, Ann. S. Afr. Mus. 38 : 552 (1950).

The antennular plate bears four spines, the posterior two being only half as long as the anterior ones. A pair of denticles is present between them. The three spines on the fused coxicerites of the antennae present the same disposition as in *P. versicolor*, but the middle one is larger than the lateral ones. There is no flagellum on the exopodites of the second maxillipeds, these being tipped with a tuft of setae.

The three pairs of submedian spines in front of the cervical groove are slightly divergent, the three pairs behind this groove convergent, posteriorly. The groove on the posterior margin of the carapace is of the same width throughout. There are no transverse grooves on the abdominal segments.

The dimensions of the larger specimen are:

total length	..	..	..	..	280 mm.
length of carapace	..	..	..	..	115 mm.
length of supra-orbital spine			..	..	28 mm.

The cephalothorax has a bluish ground colour, while the spines are orange with golden tips. The antennular flagella are banded crimson-brown and cream. The supra-orbital spines have cream-coloured stripes.

The abdominal somites are olive-green, with a wide but faint black band on each segment. Laterally, a white streak and a cream oval-

shaped spot are present on each segment; the latter increases in width from the anterior to the posterior somites.

The telson, uropods, and abdominal appendages have a reddish tinge. The legs are banded brownish red and cream.

*Distribution.* Indo-Pacific. This species has been recorded from Bengal by Pfeffer (1897) and is known to extend from Karwar to Cape Comorin on the west coast of India. Chopra (1939) has recorded it as 'the common species of the Bombay coast'. In view of the fact that *Panulirus polyphagus* constitutes more than 99.7% of the lobster fishery around Bombay, this appears to be a case of mistaken identification.

*Panulirus homarus-dasypus-burgeri* complex

In their previous paper (1961) on the systematics of spiny lobsters of Bombay, the authors had recorded *Panulirus dasypus* (H. Milne-Edwards). This was differentiated from a related species popularly known as *Panulirus burgeri* (De Haan) by the shallow nature of the crenulations on the abdominal grooves, the latter being interrupted in the middle line, and by the absence of a flagellum on the exopodites of the second maxillipeds.

Gordon (1953) has pointed out the extent of variation in these characters in the two supposedly different species, as well as the difference in the size of the flagellum of the exopodites of the maxillipeds on the left and right sides in the same individual. These variations in the two species form a regular and overlapping series, and she concludes that they form a single variable species. De Bruin (1962) has also remarked on the variability of this feature.

Unless, therefore, other characters are found which are distinctly different in the two species, *Panulirus dasypus* must be merged with *Panulirus burgeri*.

Now, according to the law of priority, *Panulirus burgeri* is superseded by the name *Panulirus homarus*, as this species was named *Cancer homarus* as early as 1758 by Linnaeus, whereas the name *burgeri* was first used by De Haan only in 1841. (The name *dasypus* was applied first by H. Milne-Edwards in 1837.) Thus the lobster recorded by us from Bombay as *Panulirus dasypus* (H. Milne-Edwards) should properly be called *Panulirus homarus* (Linnaeus).

SCYLLARIDAE

This family is represented in Bombay waters by two species, *Scyllarus sordidus* (Stimpson) and *Thenus orientalis* (Lund). Both these squat lobsters migrate inshore in recognizable numbers during

winter, which appears to be their peak breeding season. During the rest of the year, they are quite rare, although their phyllosomae are available in plankton.

### **Scyllarus sordidus** (Stimpson)

*Arctus sordidus* Stimpson, *Proc. Acad. Nat. Sc. Philadel.* : 23 (1860); de Man, *Zool. Jahrb. Abth. f. Syst. T.* 9 : 497 (1896); Nobili, *Boll. Mus. Torino* 18 (455) : 12 (1903).

*Scyllarus sordidus* de Man, *Siboga Exped. Rep.* 39a2 : 78 (1916); Prasad & Tampi, *Journ. Mar. biol. Assoc. India* 2 (2) : 250 (1960).

The body is moderately depressed, subcylindrical. There is no flagellum on the exopodites of the third maxillipeds. The rostrum is short and truncate. The proximal antennal squame is crossed on its dorsal surface by only one ridge. The anterior extremity of the sternum has a deep triangular notch.

The third pair of thoracic legs are not subcheliform. The abdominal terga are not deeply sulcate, and have a squamiform sculpture. The dactyli of the second pair of legs are longer and slenderer than those of the first. The calcified portion of the telson terminates in four teeth.

The dimensions of a berried female are:

total length (excluding antennal squame)	..	57 mm.
length of carapace	.. ..	.. 20 mm.

Colour muddy grey; there is a prominent dark red oval spot (fading to black on preservation) in the middle of the first abdominal segment.

*Distribution.* Hong Kong, Java Sea, Singapore. It has been previously recorded by de Man (1916) from the Gulf of Mannar and by Prasad & Tampi (1960) from the same area at Mandapam. This is the first record from the west coast of India.

### **Thenus orientalis** (Lund)

*Scyllarus orientalis* Lund, *Skr. naturh. Selsk. Kbh.* 2 (2) : 22 (1793); De Haan, *Fauna Japonica, Crust.* : 150 (1841).

*Thenus orientalis* White, *List Crust. Brit. Mus.* : 67 (1847); Heller, *Reise Novara, Zool.*, 2 (3) : 93 (1865); Neumann, *Syst. Uebers. Oxyrh.* : 34 (1878); Ortmann, *Zool. Jahrb. Syst.* 6 : 46 (1891); Henderson, *Trans. Linn. Soc. London, Zool.*; ser. 2, 5 : 433 (1893); Thurston, *Bull. Madras. Govt. Mus.* 3 : 120 (1895); Thompson, *Catal. Crust. Mus. Dundee* : 18 (1901); Alcock, *Naturalist in Indian Seas* : 68 (1902); de Man, *Siboga Exped. Rep.* 39a2 : 66 (1916); Holthuis, *Temminckia* 7 : 106 (1947); Barnard, *Ann. S. Afr. Mus.* 38 : 565 (1950); Prasad & Tampi, *Proc. nat. Inst. Sci., India* B 23 : 48 (1957).

In this sole representative of the genus, the body is strongly depressed and lamellate, the carapace being broader than long. The

eyes are situated at the outer angles of the carapace. The margins of the carapace are indented, but not incised, at the cervical groove. The dorsal surface of the carapace and abdomen are studded with flattened granules or tubercles, which are in more or less transverse rows on the first five abdominal segments. The abdominal segments 2-5 have a slight median ridge, which ends in a sharp projecting point on the fifth segment. The fifth pair of legs in the female is not chelate.

The dimensions of a large-sized specimen are:

total length (excluding antennal squame) ..	..	240 mm.
length of carapace ..	..	95 mm.

Colour muddy grey.

*Distribution.* Mauritius, Red Sea, Persian Gulf, India, East Indies, Australia, China. It has been recorded from India by White (1847), Neumann (1878), Ortmann (1891), Thompson (1901), from Madras by Heller (1865), Henderson (1893), from the Orissa coast by Alcock (1902), and from Mandapam by Prasad and Tampi (1957).

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